IKA

designed for scientists

EN

ACCURATE AND POWERFUL

Passionately enabling chemists to create a better world since 1910.
From A to Z.

TEMPERATURE CONTROL PRODUCTS MADE BY IKA.

Heating and Cooling Temperature Control Instruments

/// Highly precise and full of power

All from one source: With our temperature control products we offer a wide range for all temperature control applications with the highest precision and with full power. We promise that you will not only be impressed by the above-average pressure and suction power of the pump.
From -30 °C to +250 °C: The temperature range of our temperature control products is meeting all challenges. And also your budgets: We offer affordable entry level devices as well as high-end products for the most demanding requirements.

In addition to the above-average and industry-inspiring pressure and suction power, our devices are intent on sustainability. For example, our topseller RC 2 basic/control is equipped with a compressor, which only runs if cooling is necessary.

Another highlight, besides the outstanding compatibility to many applications, is our Wireless Controller: It enables safe and remote control. A safety factor, but at the same time a very convenient way to control the IKA tempering systems in any position.

3-YEAR WARRANTY*
* 2 years + 1 year after registering on www.ika.com/register, excludes wear parts

Find out more about IKA and order our fascinating products online: **www.ika.com.**

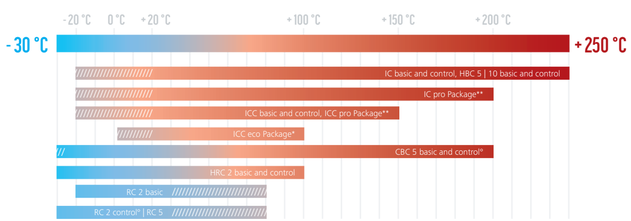
The right temperature control product for every application

/// Comparison of all temperature control products

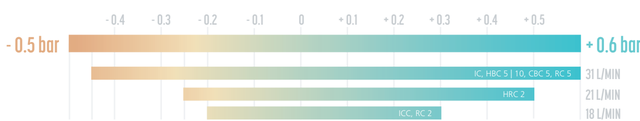
	ICC basic | control	ICC eco Package* basic | control	ICC pro Package** basic | control
Page	**16 – 19**	**66 – 67**	**66 – 67**
Working temperature range	RT + 10 °C to + 150 °C	RT + 10 °C to + 100 °C	RT + 10 °C to + 150 °C
Temperature stability	± 0.02 K | ± 0.01 K	± 0.02 K | ± 0.01 K	± 0.02 K | ± 0.01 K
Heating power	2,000 W	2,000 W	2,000 W
Cooling power	–	–	–
Pump power pressure side	0.3 bar	0.3 bar	0.3 bar
Pump power suction side	0.2 bar	0.2 bar	0.2 bar
Max. flow rate	18 l/min	18 l/min	18 l/min
External tempering	no | yes	no | yes	no | yes
Solenoid valve control	no	no	no
Applications	› Compact immersion circulator primarily for internal applications. › Usable in different bath vessels. › For tempering diverse samples, e.g. for analysis, material and food testing.	› Heating bath circulator for internal or simple external applications. › For tempering various samples, e.g. in test tubes with precise-fitting IKA immersion racks. › With pump connection set as well as suitable for tempering small analytical devices or reaction systems.	

IC basic | control	IC pro Package** basic | control	HBC 5 basic | control	HBC 10 basic | control
24 – 25	**69**	**20 – 23, 26 – 27**	**20 – 23, 26 – 27**
+ 20 °C to + 250 °C	RT + 10 °C to + 250 °C	RT + 10 °C to + 250 °C	RT + 10 °C to + 250 °C
± 0.02 K | ± 0.01 K	± 0.02 K | ± 0.01 K	± 0.02 K | ± 0.01 K	± 0.02 K | ± 0.01 K
2,500 W	2,500 W	2,500 W	2,500 W
–	–	–	–
0.61 bar	0.61 bar	0.61 bar	0.61 bar
0.45 bar	0.45 bar	0.45 bar	0.45 bar
31 l / min	31 l/min	31 l/min	31 l/min
yes	yes	yes	yes
no | yes	no | yes	no | yes	no | yes
› Immersion circulator for demanding internal and external applications. › Can be placed in different baths using removable bath bridge, e.g. for material testing in large, open baths or for external high-performance tempering of analytical devices.	› Heating bath circulator for demanding internal and external applications. › IKA immersion racks can be used for tempering test tubes. › Suitable for external tempering of double-walled vessels (e.g. lab reactors) with usable volumes greater than 3 liters.	› Powerful circulators for tempering external applications, e.g. for tempering double-walled lab reactors or distillation equipment. › With IKA accessories, the HBC series circulators are also suitable for tempering large, external, open baths. › For the determination of temperature-dependent material constants, e.g. viscosity or thermal conductivity in liquid-tempered test apparatuses.	

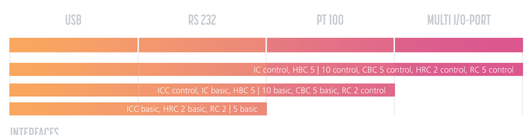
CBC 5 basic | control	HRC 2 basic | control	RC 2 basic | control	RC 5 basic | control
30 – 33	**34 – 37**	**40 – 49**	**40 – 49**
-25 °C to + 200 °C	- 20 °C to + 100 °C | - 30 °C to + 100 °C	- 20 °C to RT | - 30 °C to RT	- 30 °C to RT
± 0.02 K | ± 0.01 K	± 0.1 K | ± 0.05 K	± 0.1 K | ± 0.05 K	± 0.2 K | ± 0.1 K
2,500 W	1,500 W	–	–
350 W (at + 20 °C)	400 W (at + 20 °C)	400 W (at + 20 °C)	1,400 W (at + 20 °C)
0.61 bar	0.5 bar	0.3 bar	0.61 bar
0.45 bar	0.2 bar	0.2 bar	0.45 bar
31 l / min	21 l/min	18 l/min	31 l/min
yes	yes	no | yes	no | yes
no | yes	no | yes	no	no
› Powerful refrigerated circulators for external use. › Ideal for tempering double-walled reaction vessels, reaction systems and autoclaves. › Broad application options due to wide temperature range, e.g. in semi-conductors, packaging and plastics industries.	› Compact refrigerated and heating circulator for tempering external applications, such as bioreactors. › Usable in life science, medical, chemical, cosmetics and food industry labs (and many others). › For tempering analytical devices such as viscometers, rheometers and polarimeters.	› Recirculating chiller for mainly external uses. › For fast and efficient cooling of external devices such as rotary evaporators, soxhlet apparatuses, calorimeters and incubating shakers. › IKA accessories are also suitable for external, open baths.	



TEMPERATURE RANGE



RELATIVE PRESSURE AND VOLUME FLOW



INTERFACES

Pump connection set required for external applications. Find out more on our "Accessories" page.
* Plastic baths (eco packages) can be used at temperatures of up to + 100 °C (H_2O only).
* Stainless steel baths (pro packages) can be used at temperatures of up to + 200 °C.
° At 2,000 rpm up to - 30 °C are possible.
/// = Operating temperature range (with external coolant). Advanced recirculating temperature (with external heating).

Safety

/// All IKA tempering products meet the highest safety standards

All of the IKA temperature control devices that are equipped with a heating function meet the highest safety classification III (FL) for use with combustible fluids pursuant to DIN 12876.

SAFE HANDLING DUE TO ERGONOMIC AND WELL THOUGHT-OUT DESIGNS

Carrying handle
Safe carrying and positioning (ICC).

Transport handle
Easy and safe handling (HBC).

Recessed handles
Ergonomic handling (HBC and RC 2).

Safe and complete drainage of baths
The bath can be fully emptied of thermal fluids, in a simple and clean manner. The physical separation of the drain valve and the opening screw ensures that the user does not come into contact with the fluid.

Bracket
Secures the base and protects the floats and tubular heater (ICC).

Casters
Facilitate easy positioning of the device (RC, HBC, CBC).

SAFE OPERATION DUE TO ADJUSTABLE THRESHOLD VALUES

› **Safety temperature**
The safety temperature can be adjusted using tools or through the display. The temperature is monitored by an independent temperature sensor.

› **Thermofluid temperature threshold**
The thermal fluid that is being used can be selected in the menu. This ensures that the temperature remains outside the critical values for that particular fluid. Minimum and maximum temperature values can be adjusted manually within these parameters.

› **Speed**
The speed can be restricted; which allows for determining the maximum pump pressure.

VISUAL AND AUDIBLE ALARM
Indication of critical fluid level, critical temperature or blocked pump.

LOCK FUNCTION
Locks set parameters to prevent accidental adjustments on the WiCo.

FLUID LEVEL DETECTION
Critical minimum or maximum levels are recognized both mechanically (by the floater) as well as electronically (by a temperature sensor).

Power

/// Superior power

Whether infinitely adjustable pressure/suction pump or premium grade stainless steel: Rely on a strong partner.

› **Tempering**
The IKA heating and refrigerating circulators temper fluids ranging from -30 °C to +250 °C with a heating and cooling power of up to 2.5 kW and 1.4 kW respectively.

› **For decades, temperature control has been one of IKA's core competencies**
IKA heating circulators reach a temperature constancy of up to ± 0.01 K. The power-regulated compressor of the recirculating chiller allows a constant temperature of up to 0.05 K.

The large heating surfaces gently control the temperature of the thermal fluids and ensure outstanding heat transfer. The strong heat output of the circulators ensures short heat-up times.

All IKA heating circulators have the option of adding a cooling coil with large cooling surface for operating in or below ambient temperature. By connecting a chiller, it is possible to reach an operating temperature down to -20 °C.

› **Pressure/suction pump**
All IKA circulators use a powerful, infinitely adjustable pressure/suction pump made of high-quality PEEK plastic. It allows for flexible use of the devices in open or closed system applications. The pump ensures homogenous mixing inside the bath and provides a high flow rate for external applications.

All circulators are equipped or can be retrofitted using pump connections (M 16 × 1).

› **Pump curve**
The actual maximum flow rate can be determined under known pressure loss of the experiment based on a pump curve.

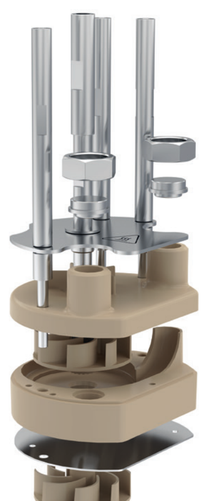
Pressure losses occur, for instance, from height differences, narrow and long hoses as well as the high viscosity of a bath fluid. The maximum viscosity of the bath fluid is 50 mPas.

› **Energy efficiency**
The excellent insulation and the demand-driven output control ensure that IKA temperature control instruments are highly energy-efficient.

As such, IKA recirculating chillers use up to 60 percent less energy than comparable competitors' devices in standard applications.

› **Robust and durable**
IKA temperature control products are made of high-quality materials and designed for a long service life.

Parts that come into contact with products are made of premium grade stainless steel (V4A) and highly durable PEEK, FKM and PTFE; meeting the basic requirements for use in the food industry.



Pressure/suction pump

Intelligence

/// Intuitive operation and automatic tempering

Smart technology as well as user-friendly menu navigation simplify temperature control for any application.

› **Connectivity**
USB and RS 232 are standard interfaces. Software programs are used to gather the measured data and control the devices, e.g. labworldsoft® by IKA. Following registration, the Firmware Update Tool ensures that users always have the latest version of the software.

Most IKA circulators have a PT 100 interface for the display and control of the external temperature (except for the ICC basic, RC 2 | 5 basic and HRC 2 basic).

› **Calibration and adjustment**
The internal (and, if available external) temperature sensor can be adjusted either via a two- or three-point calibration process.

› **Automatic tempering**
Before starting the tempering process, the control parameters of the bath fluid as well as the amount of the bath fluid are measured in order to prevent the temperature from being exceeded. There are also options to manually set the PID control parameters.

› **Software control/specification of heating rates**
Labworldsoft® software can be used to precisely specify temperature ramps and heat-up times/heating rates.

› **Operating modes**
There are four options after a restart or power failure – simply select the mode of operation.

Operating mode A:
After switching on/power interruption, no automatic restart of functions.

Operating mode B:
After switching on/power interruption, automatic start of functions depending on the previous settings. Ideal when working via switchable sockets.

Operating mode C:
Set values (set in A or B) cannot be modified. After switching on/power interruption, automatic start of functions depending on the previous settings.

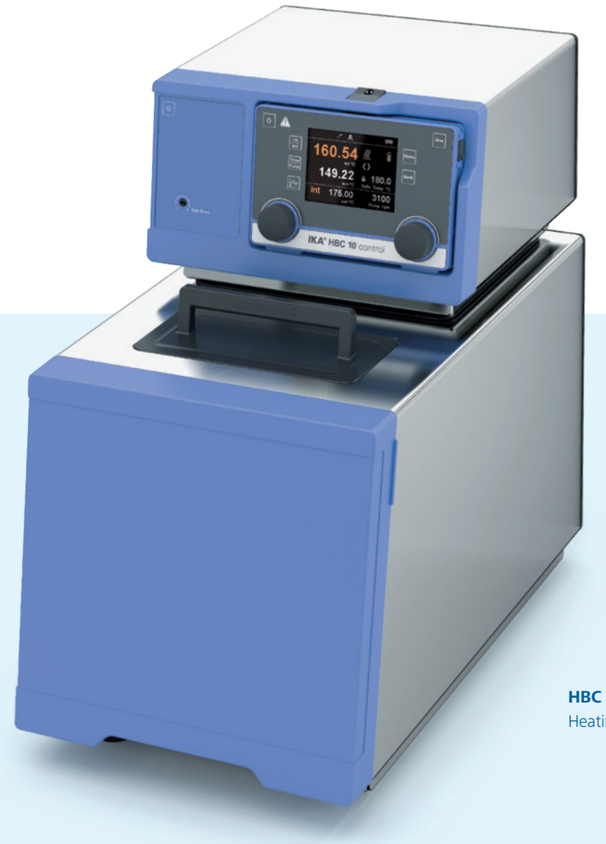
Operating mode D:
Confirmation query for set value changes; if functions are active. After switching on/power interruption, no automatic restart of functions.

› **Intuitive operation**
User-friendly menu navigation, push buttons and knobs enable simple operation.

IKA control models

/// The added value of the control models

DISCOVER **THE BENEFITS** OF THE CONTROL MODELS



HBC control
Heating bath circulator

SAFETY

› **Monitoring the temperature**
Additionally adjustable range for external temperature. Checking the gap between internal and external temperature (adjustable).

› **Monitoring the pump pressure**
Easy adjustment/selection of max. pressure.

› **Wireless Controller (WiCo) (excl. ICC control):**
Safe remote control of the devices, e.g. inside the fume hood. Wireless bluetooth control of the devices with a range of up to 10 meters (30 ft.) or via USB cable.

› **Audible signals e.g. reaching set temperature**

› **Alarm-controlled shut-off (via multi-IO port)**

› **Stand-by operation (via multi-IO port)**
By connecting current to switch input, the device can be turned off.

POWER

› **Increased precision**
IKA control devices reach a temperature constancy of up to ± 0.01 K. The power-regulated compressor of the circulating chiller allows for a constant temperature of up to 0.05 K.

› **Output performance can be reduced**
The option to reduce the heat performance down to 50 % of the rated output for moderate heating times in order to adjust to previous systems or as overload protection.

› **Control of a cooling coil (via multi-IO port)**
Using a cooling coil as an extension to the heating circulators for quick cooling, tempering at room temperature or to absorb moderate temperature increases (e.g. via exothermal reaction).

With a controlled solenoid valve, the tap or cooling water is purposefully regulated, thus reducing the water consumption to a minimum.

Option to connect external solenoid valves via multi I/O port (not ICC/RC 2 control)

› Controlling solenoid valves
- automatic refills
- turning the cooling water circuit on/off
- monitoring the fluid level
- electronic shut-off valve

› Output for alarm signals

› Input for standby mode (for turning off the device)

INTELLIGENCE

› **Clear and user-friendly display**
All important process parameters are clearly arranged and easy to read. Actual and set temperature, fill level and safety temperature readout (among other parameters). Quick access to all relevant control parameters.

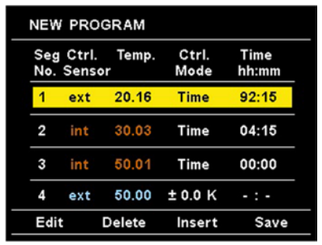
› **Programming function**
10 individual programs with 10 steps each can be operated via time, set temperature and/or a temperature gradient. Additional features such as integrating solenoid valves are possible.

› **Measuring graph**
The main screen can display either the process parameters (standard) or a temperature/time graph. The user can switch between these options using a quick-access key.

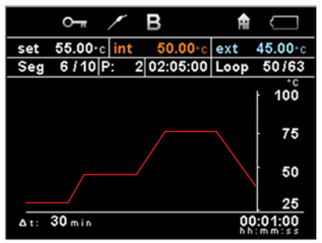
› **Timer/counter function**

› **Switch from external to internal temperature control at the press of a button**
All control units access one PT 100 interface for an external temperature sensor. Thus, the internal or external temperature can be regulated at any time.

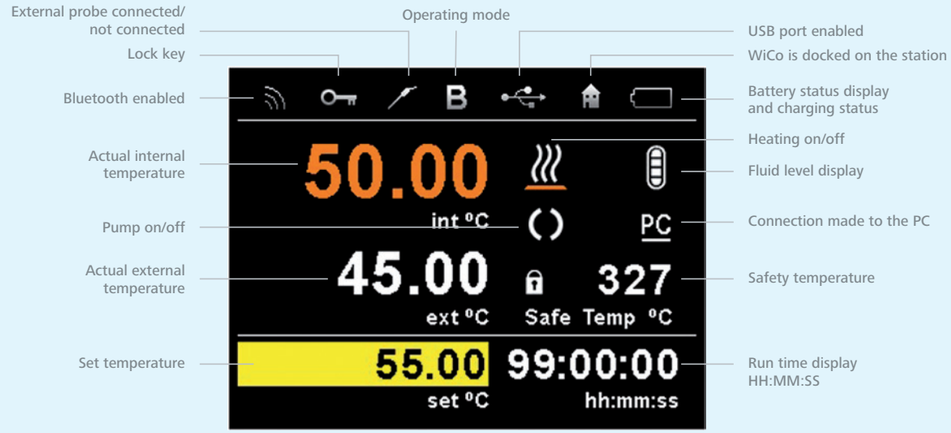
› **Degassing function**
For reducing air pockets in oils.



Programming function



Measuring graph

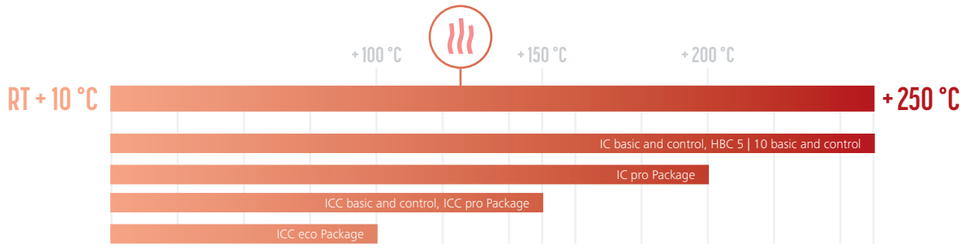


HRC 2 control
Refrigerated and heating circulators

Heating

/// Optimal heat exchange within a temperature range of RT + 10 °C to + 250 °C.

Regardless of our circulators ICC and IC or our heating bath circulators HBC 5 & 10 – IKA temperature control products are reliable, safe and work under full pressure of the powerful pressure and suction pump. Large heating surfaces provide for optimal heat exchange of temperatures up to + 250 °C.



ICC basic and control
Compact immersion circulators

IC basic and control
Immersion circulators

HBC 5 | 10 basic and control
Heating bath circulators

The colorful TFT graphic display of the HBC 10 control displays all relevant process data.

ICC basic and control

/// Compact immersion circulators

The compact immersion circulator ICC basic and the ICC control are designed for tempering fluids up to +150 °C and thus provide an economic and attractive solution for standard applications, such as the tempering of samples. The ergonomic handle and the compact design allow for safe transport as well as convenient use. The integrated base provides a secure stand while protecting floaters and tubular heating elements. A bracket for mounting the bath vessel is included in the scope of delivery. The compact ICC immersion circulators allow for simple and flexible exchange of different baths.

The ICC circulators from IKA are ready to connect to a pump connection set (PCS.ICC) for external tempering as well as to a cooling coil (CC2) for operation at and below ambient temperature.

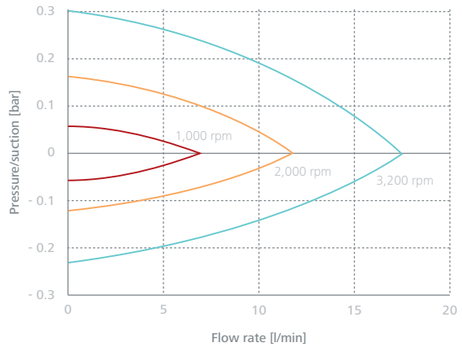
- ICC control – **graphic display** showing parameters such as temperature, pump speed, etc.
- ICC control – integrated **PT 100 temperature probe interface.**
- **USB/RS 232 interfaces** for connecting a PC, using labworldsoft and enabling online updates of device software.
- **Integrated base** protects tubular heating elements and floaters.

APPLICATION EXAMPLE

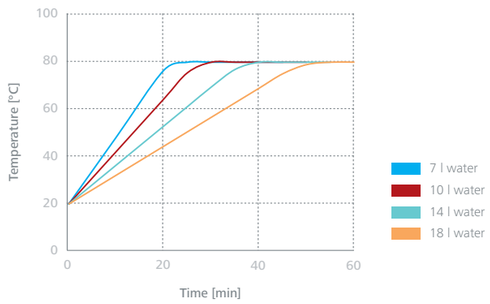
As shown in the application, the ICC circulators from IKA can be mounted with a bath bridge or connected to various sized baths using the mounting bracket included in the scope of delivery.

An additional open bath can be tempered by connecting the pump connection set. The ICC is connected to the external plastic bath via a level controller.

These features show that, the ICC circulators are very flexible and space-saving. One example is to use the test tube inserts, making the ICCs suitable for tempering large number of samples.



Pump characteristic curves: ICC basic & control
Measurement in accordance with DIN 12876-2 with water at +20 °C, closed pump circuit



Heating time curves: ICC basic & control
Heating time varies based on bath sizes. The information is based on water volume in an open bath at room temperature.

ICC with bracket (included in scope of delivery) and pump connection set PCS.ICC (accessory).

TECHNICAL DATA

/// ICC basic, Ident. No. 0004134400 |
ICC control, Ident. No. 0004136600

Heat output (230 V)	2,000 W
Working temperature range	RT +10 °C to +150 °C
Max. flow rate (at 0 bar)	18 l/m
Pump power (pressure)	0.3 bar
Pump power (suction)	0.2 bar

IC and HBC

/// Powerful heating circulators

The IKA IC and HBC circulators are following a modular design principle. The IC head is its core. When combined with a high-quality insulated bath, the IC turns into an HBC heating bath circulator. The high performance pump reaches a high flow rate and, together with the large heating body surface, provides for optimal heat exchange between the application and circulator.

NEW: BASIC DEVICES WITH ADDED POWER.

The IC and HBC basic circulators were optimized and come with improved performance data: Tempering up to +250 °C with the same pump power and control units.

IC basic
Immersion circulator

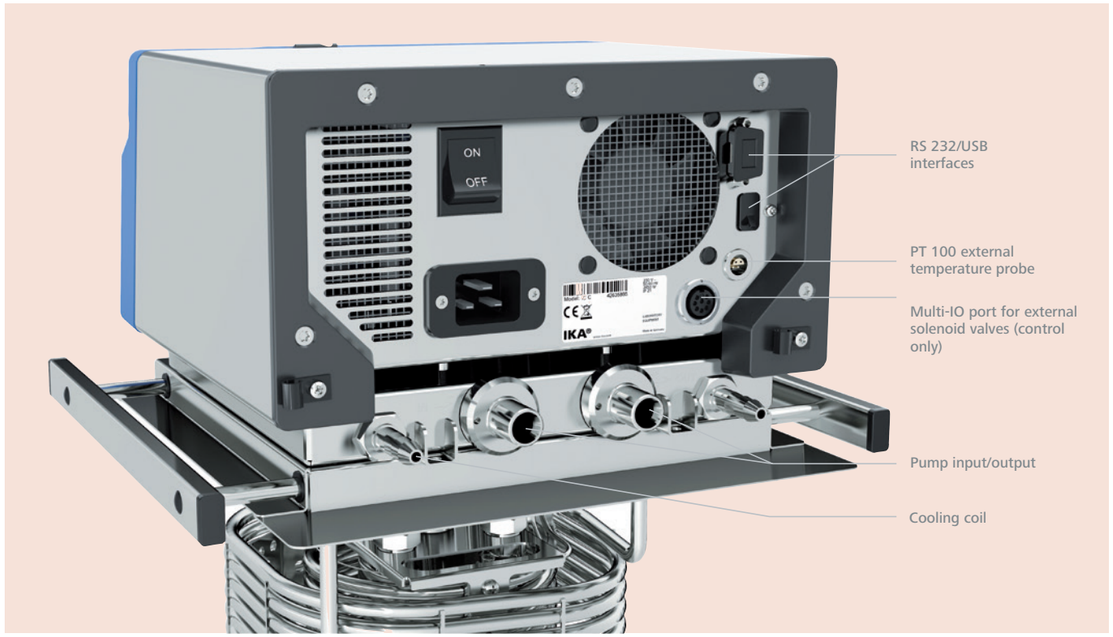
IC basic and control

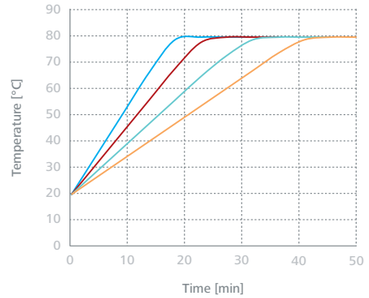
The IC immersion circulators are designed for tempering liquids up to +250 °C.

HBC 5 basic and control

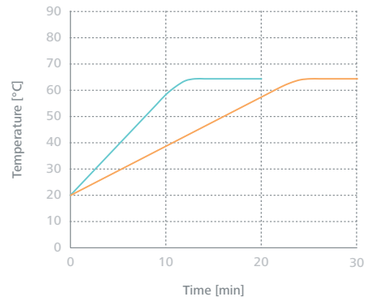
The excellent insulation of the heating bath circulators HBC offers short heat-up times.

BASIC AND CONTROL **INTERFACES**

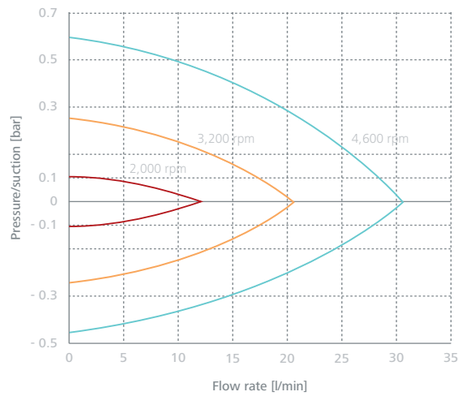




Heating curves: IC basic & control
The heating curves of the IC basic/control show the heating time dependent on different bath sizes. The information is based on water volume in an open bath at room temperature.



Heating curves: HBC 5 | 10 basic & control
The heating curves show the heating times of the HBC 5 with 5.5 l water volume and the HBC 10 with 10 l water volume.



Pump curves: IC | HBC basic & control
Measurement in accordance with DIN 12876-2 with water at +20 °C, closed pump circuit.

TECHNICAL DATA

/// IC basic, Ident. No. 0003861000 | IC control, Ident. No. 0003863000
HBC 5 basic, Ident. No. 0004125000 | HBC 5 control, Ident. No. 0004127000

Heat output (230 V)	2,500 W	Max. flow rate (at 0 bar)	31 l/m
Working temperature range	RT +10 °C to +250 °C	Pump power (pressure)	0.61 bar
		Pump power (suction)	0.45 bar

IC basic and control

/// Universal immersion circulators

The IC immersion circulators are designed for tempering liquids up to +250 °C. Due to the flexible bath bridge, the device can be mounted on various size baths.

The control version features a removable WiCo (wireless controller), which allows for working in a fume hood, for example. The advanced features enable the device to be used in demanding internal and external applications, such as analysis and material testing.

IC basic
Universal immersion circulators

IC control
Universal immersion circulators

USB/RS232 interfaces for connecting a PC, using labworldsoft and enabling online updates of device software.

Due to the **flexible bath bridge,** the IC immersion circulator can be mounted on baths of various sizes (285 – 400 mm).

Integrated pressure/suction pump for internal and external temperature control.

Connector for **PT 100 temperature probe.**

IC control – connection option of external solenoid valves over **multi-IO port.**

Detachable WiCo (wireless controller) for simple and safe remote access from up to 10 m (30 ft.).

APPLICATION EXAMPLE A

The IKA IC bridge circulator can be used for internal and external tempering applications.

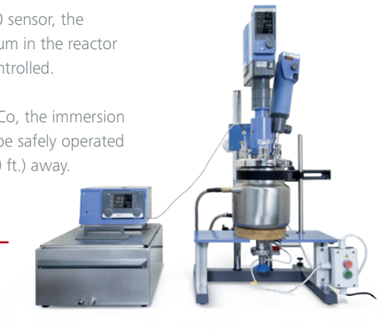
The example shows the IC control in an IB pro 20 stainless steel bath, which can temper samples that are attached to a height adjustable base of up to +200 °C.

APPLICATION EXAMPLE B

The IKA IC immersion circulators are exceptionally well suited for external applications. The setup shows the IC control with stainless steel bath, bath bridge and cover (IC control pro 20 c package) under the hood; all connected to a metal double-walled reactor. With the large stainless steel bath, the usable volume is approx. 5.5 l.

By connecting the PT 100 sensor, the temperature of the medium in the reactor can be measured and controlled.

Using the detachable WiCo, the immersion circulator IC control can be safely operated from up to 10 meters (30 ft.) away.



SAFETY AND CONVENIENCE FEATURES

- Adjustable safety circuit for temperature
- Mechanical and electronic fluid level detection
- Visual and audible alarm
- Switch from external to internal temperature control at the push of a button (control model)
- Universal use for internal and external applications
- Cooling coil included in the scope of delivery (control model)

HBC 5 | 10 basic and control

/// Heated bath circulators for external tempering applications

The well-insulated stainless steel heating bath and powerful PEEK pressure and suction pump are two of the key features of HBC heated bath circulators. The maximum temperature of the HBC heating bath circulator is +250 °C. The large surface of the tubular heating elements provides for optimal heat exchange. The bath fluid is heated gently and promptly.

Due to its high temperature consistency of up to ± 0.01 K, short heat-up times and advanced features of the high-tech TFT display with WiCo (wireless controller), the HBC control heating bath circulator is the ideal solution for demanding and complex tempering processes.

Visual and audible alarm.

USB/RS 232 for connecting a PC, using labworldsoft and enabling online updates of device software.

Integrated pressure/suction pump for internal and external temperature control.

Integrated transport handle on the back of the device, recessed handles for ergonomic transport.

Multi I/0 port

HBC control – connection option of external solenoid valves over **multi-IO port.**

Detachable WiCo (wireless controller) for simple and safe remote access from up to 10 m (30 ft.).

SAFETY AND CONVENIENCE FEATURES

- Ergonomic design
- Excellent insulation for short heat-up times and improved heat transfer
- Safety drain valve
- Adjustable safety circuit
- Switch from external to internal temperature control at the push of a button (control model)

APPLICATION EXAMPLE

The HBC heating bath circulator is ideal for external applications, for example the heating of double-walled laboratory reactors, such as the LR-2.ST from IKA.

BIG EXPANSION VOLUME

HBC 5 basic and control

The HBC 5 has a bath capacity of 5.5 up to 7.5 liters. This adds up to a usable volume of 2 liters.

HBC 10 basic and control

The HBC 10 has a bath capacity of 7.5 up to 10.5 liters. This adds up to a usable volume of 3 liters.

Bath opening 160 × 90 mm

Heating and cooling

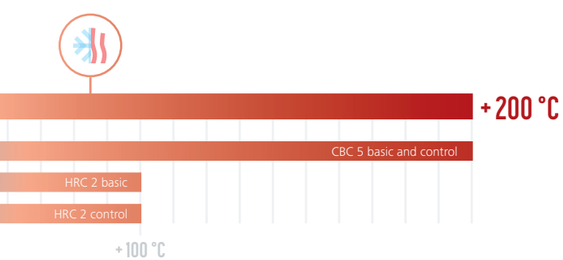
/// Heating and cooling in one

IKA has expanded its circulator portfolio by four new devices, adding the combined refrigerated and heating circulators CBC 5 and HRC 2 devices (each in basic and control variants). The temperature range is from -30 °C to +200 °C.

CBC 5 basic
Refrigerated and heating circulator

CBC 5 control
Refrigerated and heating circulator

HRC 2 basic
Refrigerated and heating circulator



NEW!

HRC 2 control
Refrigerated and heating circulator

Temperature control products

CBC 5 basic and control

/// Powerful refrigerated and heating circulators

The CBC 5 is a powerful refrigerated and heating circulator with 2,500 W heating power and 350 W cooling power. It is best suited for external applications as it uses the proven pressure and suction pump of the HBC and IC series. High-quality insulation of the device allows for fast heat-up times and reduces heat input at low temperatures.

The basic as well as the control models can temper the medium by using an external temperature sensor. All parameters can be read out, monitored and completely documented by software (e.g., labworldsoft® or NAMUR commands), using the RS 232 or USB interfaces.

SAFETY AND CONVENIENCE FEATURES

- Safety and convenience features
- Adjustable safety circuit
- Filling level detection
- Visual and audible alarm
- RS 232 and USB interfaces
- Multi IO-port (control version only)
- Switching from external to internal temperature control at the push of a button (control model)
- Excellent insulation
- Safety drain valve

CBC 5 control
Refrigerated and heating circulator

APPLICATION EXAMPLE

A typical field of application of the combined heating and cooling circulators is tempering process systems on laboratory or pilot scales. In our example, the IKA magic PLANT is combined with the inline disperser, IKA magic LAB. First, the product is being heated by the CBC 5 using the double-walled IKA magic PLANT, then held at the set temperature in the subsequent disperser process with cooling function. The product is then cooled to room temperature. The external temperature sensor directly impacts the temperature of the final product.

TECHNICAL DATA

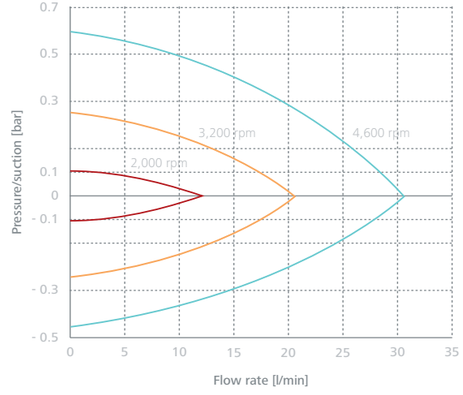
/// CBC 5 basic, Ident. No. 0004165000 | CBC 5 control, Ident. No. 0004167000

Heat output (230 V)	2,500 W	Max. flow rate (at 0 bar)	31 l/m
Working temperature range	-25 °C to +200 °C (-30 °C possible at 2,000 rpm)	Pump power (pressure)	0.61 bar
		Pump power (suction)	0.45 bar

COOLING POWER

/// CBC 5 basic, Ident. No. 0004165000 | CBC 5 control, Ident. No. 0004167000

Temperature	Cooling power at max. speed	Cooling power at 3,200 rpm
+20 °C	350 W	400 W
+10 °C	320 W	370 W
0 °C	270 W	320 W
-10 °C	190 W	240 W
-20 °C	80 W	130 W



Pump curve: CBC 5 control & basic
Measurement in accordance with DIN 12876-2 with water at +20 °C, closed pump circuit.

USB/RS 232 interfaces for connecting a PC, using labworldsoft and enabling online updates of device software.

Silent mode – the fan only runs as needed.

Connector for external **PT 100 temperature probe.**

CBC control – **detachable WiCo** (wireless controller) for simple and safe remote access from up to 10 m (30 ft.).

CBC control – connection option of external solenoid valves via **multi-IO port.**

CBC control – **control accuracy.** The speed-regulated compressor provides a temperature stability of up to ± 0.01 K.

Temperature control products

HRC 2 basic and control

/// Compact refrigerated and heating circulators

Launching the HRC 2, IKA is offering a compact refrigerated and heating circulator with 400 W cooling power and 1,500 W heating power. It is best suited for tempering small, external applications. Applications with larger pressure losses, e.g. lab reactors or viscometers can be supplied with appropriate flow volume of bath fluid through the more powerful pressure and suction pump (0.5 bar). With a level controller, it is possible to temper samples in open baths.

The on-demand cooling unit runs quietly and with utmost efficiency. Maximum cooling performance is achieved if the easy-to-reach air filter is replaced routinely.

NEW!

USB/RS 232 interfaces for connecting a PC, using labworldsoft and enabling online updates of device software.

Silent mode –
the fan only runs as needed.

Integrated transport handle on the back of the device, recessed handles for ergonomic transport.

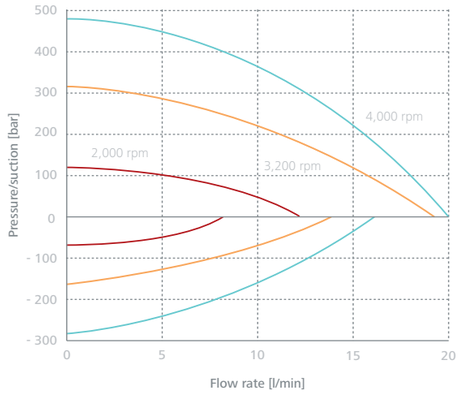
HRC 2 control – connector for external **PT 100 temperature probe.**

HRC 2 control – connection option of external solenoid valves via **multi-IO port.**

HRC 2 control – **detachable WiCo** (wireless controller) for simple and safe remote access from up to 10 m (30 ft.).

SAFETY AND CONVENIENCE FEATURES

- Adjustable safety circuit
- Filling level detection
- Visual and audible alarm
- RS 232 and USB interfaces
- Multi IO-port (control version only)



Pump curve: HRC 2 control & basic
Measurement in accordance with DIN 12876-2 with water at +20 °C, closed pump circuit.

TECHNICAL DATA

/// HRC 2 basic, Ident. No. 0025003742 | HRC 2 control, Ident. No. 0025004524

Heat output (230 V)	1,500 W
Working temperature range	-20 °C to +100 °C | -30 °C* to +100 °C
Max. flow rate (at 0 bar)	21 l/m
Pump power (pressure)	0.5 bar
Pump power (suction)	0.2 bar

* -30 °C possible at 2,000 rpm.

COOLING POWER

/// HRC 2 basic, Ident. No. 0025003742 | HRC 2 control, Ident. No. 0025004524

Temperature	Cooling power HRC 2
+20 °C	400 W
+10 °C	370 W
0 °C	320 W
-10 °C	240 W
-20 °C	130 W

APPLICATION EXAMPLE

The example shows a double-walled 10 l glass reactor for growing algae.

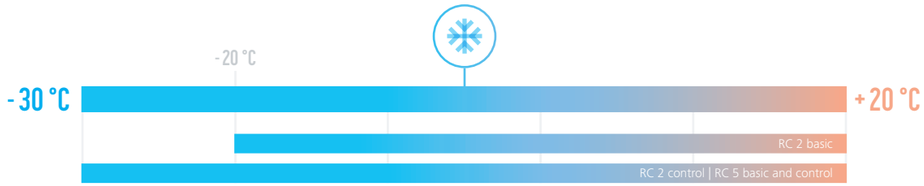
The HRC 2 is well suited for achieving constant temperature conditions inside the reactor in order to achieve a high/controlled growth rate of the algae formation. Applications requiring critical temperature control, the temperature can be directly controlled in the medium by using the HRC 2 control with an external temperature measurement sensor.

Cooling

/// Compact cooling power of 1,400 watts

IKA is expanding its product offering of highly efficient recirculating chillers by two new devices. With the RC 5 basic and control, there are now two devices available with a cooling power of 1,400 W, complementing the line by extremely compact and powerful chillers.

Think smart – not only save valuable drinking water, but also energy and lower your operating costs.



RC 2 basic
Recirculating chiller

RC 2 control
Recirculating chiller

RC 5 basic
Recirculating chiller

RC 5 control
Recirculating chiller

RC 2 | RC 5 basic and control

/// Energy-efficient recirculating chillers

Due to the high energy efficiency of our R134a-based refrigeration machine, a significantly lower amount of greenhouse gases is emitted over the life span of the product compared to unregulated chillers using natural coolants.

Even in the worst-case scenario, IKA devices have the advantage of saving 500 g/kWh CO_2 in the current energy mix after just 1.5 years, compared to unregulated devices with natural coolants. (Assumptions: coolant has dissipated completely at the end of the product life cycle; GWP for R134a = 1,300, according to IPCC AR5 100 years, 250 work days/year; 2 kWh savings/day).

With the launch of the RC 5, IKA is offering, for the first time, a recirculating chiller with natural coolant R 290. Adding the innovative on-demand control, IKA is contributing to a green future.

DURING THE DEVELOPMENT OF THE RC RECIRCULATING CHILLERS, IKA ENGINEERS STRONGLY FOCUSED ON ENERGY EFFICIENCY AND DEVELOPING UNIQUE SOLUTIONS.

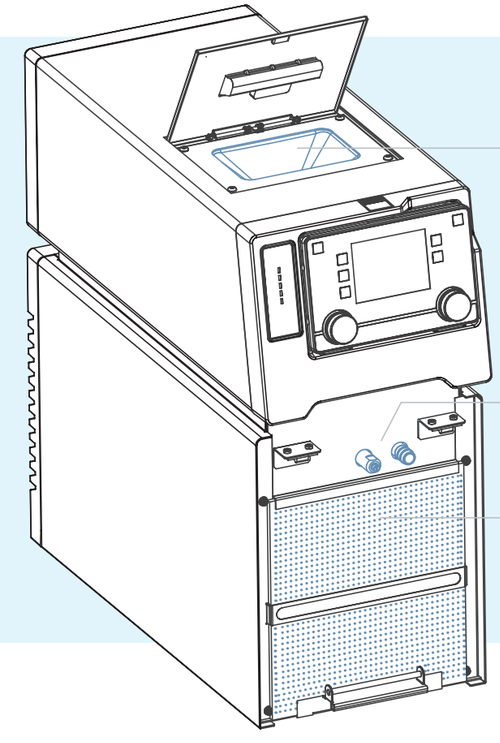
› The heart of the RC 2 and RC 5 is a speed-controlled compressor, which is used to respond to the actual cooling need. The energy consumption can be reduced significantly as well as the compressor service life increased.

› The high-quality foam insulation, surrounding the storage tank, minimizes the energy input and keeps the bath fluid cool.

› The air-cooled microchannel condenser ensures optimal heat dissipation. The air flow, required for the micro-channel condenser, is generated by a speed-controlled fan. It reduces the noise level and lowers energy consumption.

› The electronically controlled expansion valve contributes to achieving an excellent temperature stability of up to ± 0.05 K.

IKA RECIRCULATING CHILLER –
ENVIRONMENTALLY FRIENDLY



Economic features

/// Save money

SAVE WATER

› Calculated at an assumed average of six operating hours a day on 200 business days a year, a rotary evaporator (50 l/h) cooled with tap water consumes 60,000 liters of water per year. That amount can be saved by using a recirculating chiller, not only protecting the environment, but also reducing operating costs.

SAVE ENERGY

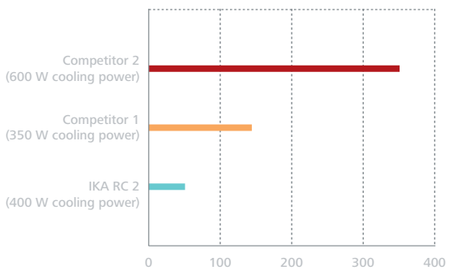
› IKA has succeeded in achieving energy savings of up to 60 % in comparison to competitors' devices, simply by the afore-mentioned innovations of the recirculating chiller, particularly the speed-controlled compressor.

POWER CONSUMPTION – A COMPETITIVE ANALYSIS

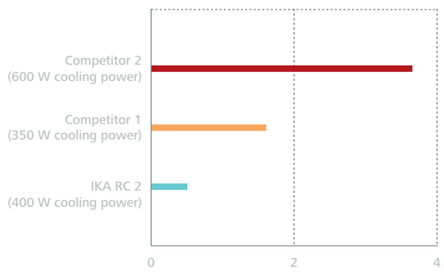
› Example: Energy consumption of a chiller in a standard distillation of a rotary evaporator (500 ml water in an 1 liter evaporating flask). Water bath temperature +60 °C, pressure 70 mbar.

When comparing the average power consumption of the chiller in neutral/idle mode (rotary evaporator is turned off), the RC 2 from IKA clearly runs more efficiently in comparison to the competition (Figure 1).

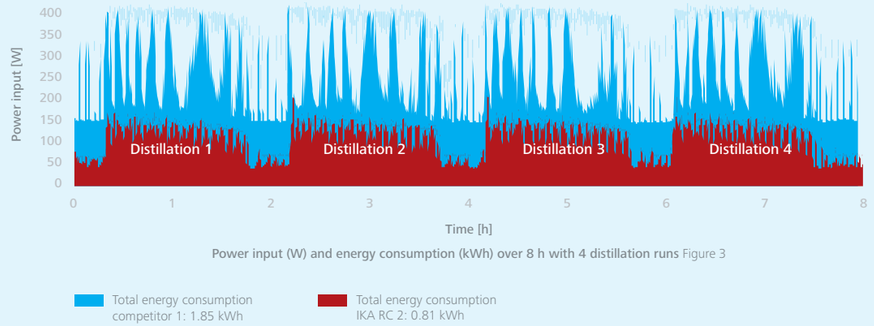
When considering energy consumption over an entire day, the efficiency has an even greater impact. The on-demand circulation chiller from IKA reduces its power to a minimum, adapting to the actually required cooling performance. Figure 2 shows that the IKA RC 2 in comparison to competitor 1 consumes less than one-third of the energy.



Zero load power (W)
Figure 1



Daily energy consumption
Figure 2



Power input (W) and energy consumption (kWh) over 8 h with 4 distillation runs Figure 3

› Figure 3 shows the mechanism of our on-demand recirculating chiller (red) in comparison to an unregulated chiller (blue). Depicted is an 8-hour work day, with four 500 ml (H_2O) distillation runs. It's easy to recognize the overall lower power demand when in idle mode, as well as the adjustment of the cooling performance during the distillation process.

RC 2 | RC 5 basic and control

/// Energy-efficient recirculating chillers

The RC cooling circulators are designed for fast and efficient cooling of external devices. The chillers distinguish themselves by short cooling times with a temperature stability of up to ± 0.05 K. The operating temperature range is from room temperature down to -30 °C. The maximum recirculation temperature is +80 °C. You can adjust the pump performance as needed through the speed-controlled pressure and suction pump; hence exceeding the cooling power according to DIN.

The control devices are equipped with a connector for an external temperature sensor. Using the PT 100 temperature probe (within scope of delivery), you can control the temperature directly in your target medium.

The device can be operated conveniently via the RC 2 | 5 control WiCo (wireless controller). It makes the chiller space-saving and allowing for it to be placed in even hard-to-reach areas of the lab.

Energy efficiency – up to 60 % lower energy consumption during standard operation (compared to devices of competitors).

Control accuracy – the speed-regulated compressor provides a ten-times higher temperature stability of up to ± 0.05 K.

Silent mode –
the fan only runs as needed.

Handling – safe and ergonomic handling due to a well thought-out design. Casters on the back of the device enable easy transport and set-up.

Large operating volume – the large difference between the maximum and minimum volume can be used as the operating volume for external tempering.

RC 2 | 5 control – connection for **PT 100 temperature probe.**

RC 2 | 5 control – **detachable WiCo (wireless controller)** for simple and safe remote access from up to 10 m (30 ft.).

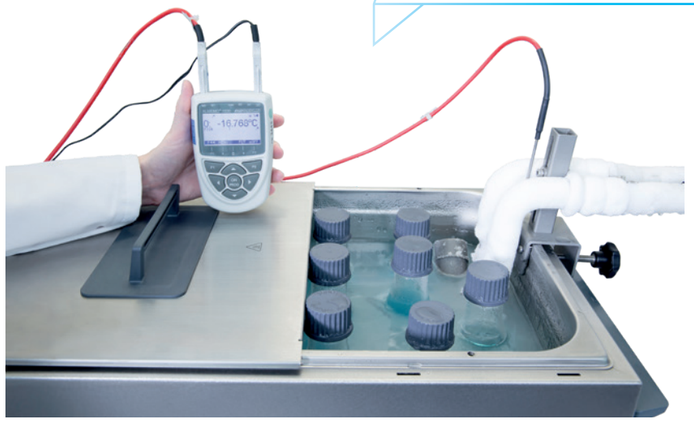
NEW!
THE IKA RECIRCULATING CHILLER HAS A BROADER OPERATING TEMPERATURE RANGE OF UP TO +80 °C

THE RC 2 CONTROL COOLS DOWN TO -30 °C
(50 W COOLING POWER AT 3,200 RPM)

RC 2 basic and control
Recirculating chillers

RC 5 basic and control
Recirculating chillers

IKA RECIRCULATING CHILLERS CAN ALSO COOL OPEN BATHS WITHOUT PROBLEMS DOWN **TO LOW TEMPERATURES** DUE TO A POWERFUL PRESSURE/SUCTION PUMP. THE EXAMPLE SHOWS A BATH THAT HAS BEEN COOLED TO -17 °C WITH THE RC 2.



TECHNICAL DATA

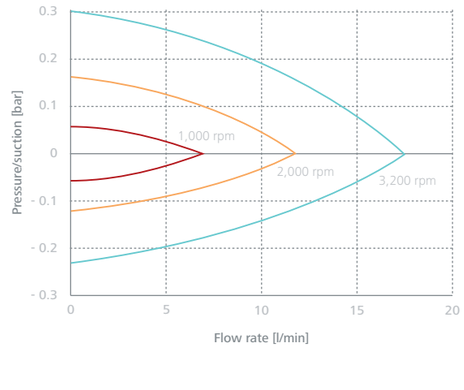
/// RC 2 basic, Ident. No. 0004171000 | RC 2 control, Ident. No. 0004173000
RC 5 basic, Ident. No. 0004181000 | RC 5 control, Ident. No. 0004183000

	RC 2 basic | control	RC 5 basic | control
Cooling power (at +20 °C)	400 W	1,400 W
Working temperature range	-20 °C to RT | -30 °C to RT	-30 °C to RT
Max. flow rate (at 0 bar)	18 l/min	31 l/min
Pump power (pressure)	0.3 bar	0.61 bar
Pump power (suction)	0.2 bar	0.45 bar

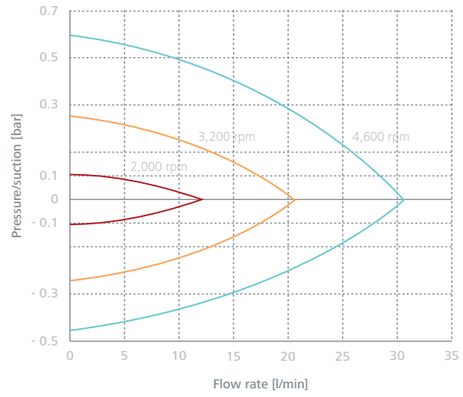
COOLING POWER

/// RC 2 basic, Ident. No. 0004171000 | RC 2 control, Ident. No. 0004173000
RC 5 basic, Ident. No. 0004181000 | RC 5 control, Ident. No. 0004183000

Temperature	RC 2 basic | control	RC 5 basic | control
+40 °C	–	1,700 W
+20 °C	400 W	1,400 W
+10 °C	370 W	1,100 W
0 °C	320 W	950 W
-10 °C	240 W	600 W
-20 °C	130 W	350 W
-30 °C	–	200 W



Pump curve: RC 2 basic & control
Measurement in accordance with DIN 12876-2 with water at +20 °C, closed pump circuit



Pump curve: RC 5 basic & control
Measurement in accordance with DIN 12876-2 with water at +20 °C, closed pump circuit

RC 2 | RC 5 basic and control

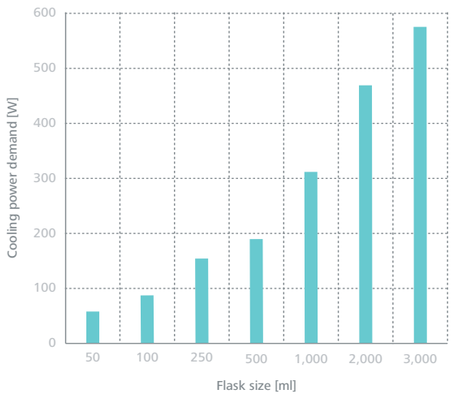
/// Application information

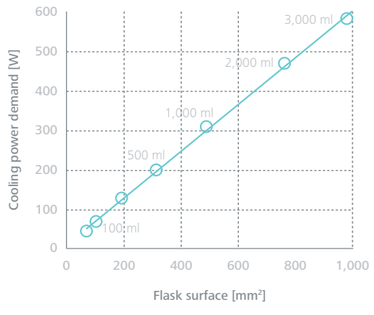
EFFICIENT USE OF THE RECIRCULATING CHILLER FOR EVAPORATION AND EXTRACTION

Using rotary evaporators for distillation or e.g. conducting Soxhlet extractions, the required cooling power is contingent upon the flask size and the number of extraction units.

The following table shows how many rotary evaporators and extraction units can be cooled with an IKA recirculating chiller. It is also a guide to finding the ideal recirculating chiller for your specific application.

COOLING POWER AT 20 °C COOLING TEMPERATURE DEPENDING ON THE FLASK SIZE*





* Water was used as reference solvent. When using other solvents, the cooling power demand could be lower.

RECIRCULATING CHILLERS

/// RC 2 basic, Ident. No. 0004171000 | RC 2 control, Ident. No. 0004173000
RC 5 basic, Ident. No. 0004181000 | RC 5 control, Ident. No. 0004183000

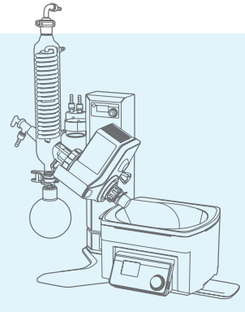
	RC 2 basic | control	RC 5 basic | control
Flask size	50 – 100 ml | 250 – 500 ml | 1,000 ml	1,000 ml | 2,000 ml | 3,000 ml | 5,000 ml
Number of rotary evaporators (Pic. 1)	4 | 2 | 1	4 | 3 | 2 | 1
Extraction units (Soxhlet apparatus – Pic. 2)	up to 4	up to 14

APPLICATION EXAMPLE A

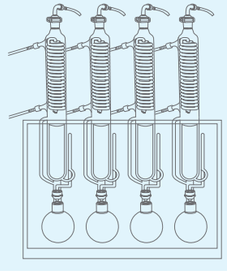
The IKA RC 5 is ideal for the cooling of multiple rotary evaporators, e.g. the IKA rotary evaporators RV 10 and RV 8. When using a 1-liter evaporation flask (depending on the solvent to be distilled), it is possible to cool up to four rotary evaporators at the same time. This results in essential space, energy and cost savings.

APPLICATION EXAMPLE B

The RC 2 recirculating chillers are suitable for cooling external analytical equipment such as laboratory reactors, calorimeters, incubating shakers or rotary evaporators. The set up below shows the RC 2 basic recirculating chiller connected to the IKA C 1 calorimeter.



Rotary evaporators
Picture 1



Soxhlet apparatus
Picture 2

Technical data

/// Temperature control instruments

TECHNICAL DATA
/// Comparison

	ICC basic | control Ident. No. 0004134400 | 0004136600	**IC basic | control** Ident. No. 0003861000 | 0003863000
Instrument type	Compact immersion circulator	Immersion circulator
Safety class	III (FL)	III (FL)
Heat output (230 V)	2,000 W	2,500 W
Cooling capacity	–	–
Coolant	–	–
Working temperature range	RT +10 °C to +150 °C	RT +10 °C to +250 °C
Operating temperature range (with outside coolant)	-20 °C to +150 °C	-20 °C to +250 °C
Temperature display	LED | TFT	LED | TFT
Display resolution	0.1 °C | 0.01 °C	0.1 °C | 0.01 °C
Setting resolution	0.1 °C	0.1 °C
Temperature consistency in accordance with DIN 12876	±0.02 K | ±0.01 K	±0.02 K | ±0.01 K
Bath capacity (liters)	dependent on the bath used	dependent on the bath used
Useable volume (liters)	dependent on the bath used	dependent on the bath used
Pump power (pressure)	0.3 bar	0.61 bar
Pump power (suction)	0.2 bar	0.45 bar
Max. flow rate	18 l/min	31 l/min
Dimensions (W × H × D)	145 × 340 × 200 mm	285 × 313 × 291 mm
Weight	3.75 kg	8.5 kg | 8.8 kg
Permissible ambient temperature	5 – 40 °C	5 – 40 °C
Permissible relative humidity	80 %	80 %
USB/RS 232 interface	yes	yes
Connection for external PT 100 probe	no | yes	yes
Threaded connection	optional	M 16 × 1
Cooling coil included	no	no | yes
Multi IO port included	no	no | yes
	€ 900,00 | € 1.400,00	**€ 2.150,00 | € 2.800,00**

TECHNICAL DATA
/// Comparison

	HBC 5 basic | control Ident. No. 0004125000 | 0004127000	**HBC 10 basic | control** Ident. No. 0004135000 | 0004137000
Instrument type	Heated bath circulator	Heated bath circulator
Safety class	III (FL)	III (FL)
Heat output (230 V)	2,500 W	2,500 W
Cooling capacity	–	–
Coolant	–	–
Working temperature range	RT +10 °C to +250 °C	RT +10 °C to +250 °C
Operating temperature range (with outside coolant)	-20 °C to +250 °C	-20 °C to +250 °C
Temperature display	LED | TFT	LED | TFT
Display resolution	0.1 °C | 0.01 °C	0.1 °C | 0.01 °C
Setting resolution	0.1 °C	0.1 °C
Temperature consistency in accordance with DIN 12876	±0.02 K | ±0.01 K	±0.02 K | ±0.01 K
Bath capacity (liters)	5.5 – 7.5 l	7.5 – 10.5 l
Useable volume (liters)	2 l	3 l
Pump power (pressure)	0.61 bar	0.61 bar
Pump power (suction)	0.45 bar	0.45 bar
Max. flow rate	31 l/min	31 l/min
Dimensions (W × H × D)	275 × 406 × 500 mm	275 × 456 × 506 mm
Weight	17.0 kg | 17.3 kg	18.0 kg | 18.3 kg
Permissible ambient temperature	5 – 40 °C	5 – 40 °C
Permissible relative humidity	80 %	80 %
USB/RS 232 interface	yes	yes
Connection for external PT 100 probe	yes	yes
Threaded connection	M 16 × 1	M 16 × 1
Cooling coil included	yes	yes
Multi IO port included	no | yes	no | yes
	€ 2.850,00 | € 3.350,00	**€ 3.050,00 | € 3.550,00**

TECHNICAL DATA
/// Comparison

	CBC 5 basic | control Ident. No. 0004165000 | 0004167000	**HRC 2 basic | control** Ident. No. 00025003742 | 00025004524
Instrument type	Heated bath circulator	Heated bath circulator
Safety class	III (FL)	III (FL)
Heat output (230 V)	2,500 W	1,500 W
Cooling capacity	350 W I 400 W at 3,200 rpm	400 W
Coolant	R134a	R134a
Working temperature range	-25 °C to +200 °C	-20 °C to +100 °C | -30 °C** to +100 °C
Operating temperature range (with outside coolant)	-30 °C** to +200 °C	-20 °C to +100 °C | -30 °C to +100 °C
Temperature display	LED | TFT	LED | TFT
Display resolution	0.1 °C | 0.01 °C	0.1 °C | 0.01 °C
Setting resolution	0.1 °C	0.1 °C
Temperature consistency in accordance with DIN 12876	±0.02 K | ±0.01 K	±0.05 K
Bath capacity (liters)	5 – 7 l	1.5 – 4 l
Useable volume (liters)	2 l	2.5 l
Pump power (pressure)	0.61 bar	0.5 bar
Pump power (suction)	0.45 bar	0.2 bar
Max. flow rate	31 l/min	21 l/min
Dimensions (W × H × D)	275 × 490 × 690 mm	220 × 525 × 475 mm
Weight	39.5 kg	28.5 kg
Permissible ambient temperature	5 – 32 °C	5 – 32 °C
Permissible relative humidity	80 %	80 %
USB/RS 232 interface	yes	yes
Connection for external PT 100 probe	yes	no | yes
Threaded connection	M 16 × 1	M 16 × 1
Cooling coil included	no	no
Multi IO port included	no | yes	no | yes
	€ 4.500,00 | € 5.000,00	**€ 3.750,00 | € 4.400,00**

** - 30 °C possible at 2,000 rpm.

TECHNICAL DATA
/// Comparison

	RC 2 basic | control Ident. No. 0004171000 | 0004173000	**RC 5 basic | control** Ident. No. 0004181000 | 0004183000
Instrument type	Recirculating chiller	Recirculating chiller
Safety class	–	–
Cooling capacity	400 W	1,400 W
Coolant	R134a	R290
Working temperature range	-20 °C to RT | - 30 °C to RT	-30 °C to RT
Operating temperature range (with outside heating)	-20 °C to +80 °C | -30 °C to +80 °C	-30 °C to +80 °C
Temperature display	LED | TFT	LED | TFT
Display resolution	0.1 °C | 0.01 °C	0.1 °C | 0.01 °C
Setting resolution	0.1 °C	0.1 °C
Temperature consistency in accordance with DIN 12876	±0.1 K | ±0.05 K	±0.1 K
Bath capacity (liters)	1.5 – 4 l	5.2 – 8 l
Useable volume (liters)	2.5 l	2.8 l
Pump power (pressure)	0.3 bar	0.61 bar
Pump power (suction)	0.2 bar	0.45 bar
Max. flow rate	18 l/min	31 l/min
Dimensions (W × H × D)	220 × 475 × 525 mm	310 × 490 × 546 mm
Weight	28.0 kg | 28.5 kg	37.5 kg
Permissible ambient temperature	5 – 32 °C	5 – 32 °C
Permissible relative humidity	80 %	80 %
USB/RS 232 interface	yes	yes
Connection for external PT 100 probe	no | yes*	no | yes*
Threaded connection	M 16 × 1	M 16 × 1
Multi IO port included	no	no | yes
	€ 3.050,00 | € 4.050,00	**€ 4.500,00 | € 5.000,00**

* PT 100 temperature probe included.

Scope of delivery

/// Temperature control instruments

SCOPE OF DELIVERY
/// Comparison

	ICC basic	ICC control	IC basic	IC control	HBC 5 | 10 basic	HBC 5 | 10 control
Pump connection set			×	×	×	×
Cooling coil CC 1				×	×	×
PT 100 interface		×	×	×	×	×
External PT 100 probe						
USB interface	×	×	×	×	×	×
RS 232 interface	×	×	×	×	×	×
Multi IO interface				×		×
1 x USB cable (station)	×	×	×	×	×	×
1 x USB cable (WiCo)				×		×
Charger for WiCo				×		×
Power cable	×	×	×	×	×	×
Barb fittings for DN 12 hoses (2 ×)			×	×	×	×
Barb fittings for DN 8 hoses (2 ×)						
WiCo wall mount						

Heating

	CBC 5 basic	CBC 5 control	HRC 2 basic	HRC 2 control	RC 2 | 5 basic	RC 2 control	RC 5 control
Pump connection set	×	×	×	×	×	×	×
Cooling coil CC 1							
PT 100 interface	×	×		×		×	×
External PT 100 probe						×	×
USB interface	×	×	×	×	×	×	×
RS 232 interface	×	×	×	×	×	×	×
Multi IO interface		×		×			×
1 x USB cable (station)	×	×	×	×	×	×	×
1 x USB cable (WiCo)		×		×		×	×
Charger for WiCo		×		×		×	×
Power cable	×	×	×	×	×	×	×
Barb fittings for DN 12 hoses (2 ×)	×	×	×	×	×	×	×
Barb fittings for DN 8 hoses (2 ×)			×	×	×	×	×
WiCo wall mount						×	×

Heating and Cooling

Cooling

× = included with delivery

Accessories

/// Baths and covers

BATH VESSELS
/// Comparison

	Bath type	Outer dimensions [mm]	Inner dimensions [mm]	Price
Bath size S				
IB 8 eco, Ident. No. 0004248100	Plastic bath, 8 l	335 × 320 × 155	286 × 227 × 150	**€ 309,00**
IB R 9 eco, Ident. No. 0020004382	Plastic bath, 9 l, rectangular	356 × 287 × 167	307 × 239 × 151	**€ 330,00**
IB 9 pro, Ident. No. 0004248500	Stainless steel bath, 9 l	377 × 374 × 195	292 × 230 × 150	**€ 435,00**
Bath size M				
IB 12 pro, Ident. No. 0004577500	Stainless steel bath, 12 l	461 × 354 × 195	317 × 292 × 150	**€ 496,00**
Bath size L				
IB 18 eco, Ident. No. 0004248200	Plastic bath, 18 l	584 × 338 × 155	490 × 286 × 150	**€ 435,00**
IB 24 HF eco, Ident. No. 0020006884	Plastic bath, 24 l, tall form	584 × 338 × 205	490 × 286 × 200	**€ 495,00**
IB R 20 eco, Ident. No. 0020004383	Plastic bath, 20 l, rectangular	552 × 365 × 167	504 × 317 × 151	**€ 440,00**
IB R 52 eco, Ident. No. 0020007044	Plastic bath, 52 l, rectangular	648 × 365 × 316	600 × 317 × 300	**€ 605,00**
IB R RO 15 eco, Ident. No. 0020006341	Plastic bath, for magnetic stirrer RO 15	722 × 365 × 165	674 × 317 × 98	**€ 770,00**
IB 20 pro, Ident. No. 0004248600	Stainless steel bath, 20 l	641 × 354 × 195	495 × 292 × 150	**€ 596,00**

Information: eco - water, +100 °C | pro - water, oil, +200 °C

IB 18 eco
Plastic bath, 18 l

IB HF 24 eco
Plastic bath,
tall form, 24 l

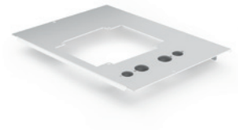
IB 9 pro
Stainless steel bath, 9 l

IB 20 pro
Stainless steel bath, 20 l

IB R RO15 eco
for magnetic stirrer RO 15

BRIDGE AND COVER
/// Comparison

	Suitable for the following sizes	Price
ICC		
Bridge BS.ICC, Ident. No. 0020003077	S	**€ 117,00**
Bridge BL.ICC Ident. No. 0020003078	M + L	**€ 117,00**
Cover CS.ICC Ident. No. 0004471500	S	**€ 122,00**
Cover CM.ICC Ident. No. 0025000290	M	**€ 155,00**
Cover CL.ICC Ident. No. 0004471600	L	**€ 155,00**
IC		
Bridge BS.IC, Ident. No. 0004472800	M + L	**€ 117,00**
Cover CM.IC Ident. No. 0004577600	M	**€ 117,00**
Cover CL.IC Ident. No. 0004471800	L	**€ 155,00**



BS.ICC
Bridge

CS.ICC
Cover

Floating globes, PP
› out of Polypropylene
› for covering open water baths
› only for water
› ø 20 mm
› 500 pcs.

Ident. No. 0020003666
€ 105,00

Accessories

/// Immersion racks

IMMERSION RACKS
/// Comparison

	ø Tubes [mm]	Depth [mm]	Immersion depth [mm]	Number of tubes	Price
Racks for bath size S					
Number of racks with ICC: 1					
Tube rack, 13 mm, stainless Ident. No. 0020004026	13	100	70	57	**€ 76,00**
Tube rack, 17 mm, stainless Ident. No. 0020004027	17	100	100	37	**€ 76,00**
Tube rack, 22 mm, stainless Ident. No. 0020004028	22	100	50	22	**€ 76,00**
Racks for bath sizes M/L					
Number of racks with ICC: 1/3 | Number of racks with IC: 2 (only L)					
Tube rack, 13 mm, ML, stainless Ident. No. 0020004029	13	100	70	73	**€ 128,00**
Tube rack, 17 mm, ML, stainless Ident. No. 0020004030	17	100	100	47	**€ 128,00**
Tube rack, 22 mm, ML, stainless Ident. No. 0020004031	22	100	50	30	**€ 128,00**
Variable rack for bath sizes M/L					
Number of racks with ICC: 1/2 | Number of racks with IC: 1 (only L)					
Variable rack, ICC, ML, stainless Ident. No. 0020004032	–	132	–	–	**€ 165,00**
Inlay 1, variable rack, ICC, 2 pcs. Ident. No. 0020004033	13	–	0 – 120*	84	**€ 55,00**
Inlay 2, variable rack, ICC, 2 pcs. Ident. No. 0020004034	17	–	0 – 120*	51	**€ 55,00**
Inlay 3, variable rack, ICC, 2 pcs. Ident. No. 0020004035	22	–	0 – 120*	33	**€ 55,00**
Bottom plates size L					
Number of racks with ICC: 1; except for bottom plate L: 0 | Number of racks with IC: with variable bottom: 1; else 0					
Variable bottom, ICC, stainless Ident. No. 0020004614	–	240	0 – 115	–	**€ 365,00**
Bottom plate L Ident. No. 0020006212	–	460	50 – 110	–	**€ 397,00**
Bottom plate L.ICC Ident. No. 0020007353	–	290	50 – 110	–	**€ 333,00**

* in 15 mm increments

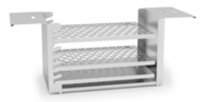
FLOATING RACKS
/// Comparison

	Suitable vessels	Max. number of samples	Unit of measure	Price
Floating tube rack 1 Ident. No. 0020003667	1.5/2.0 ml	24	5 pcs.	**€ 29,00**
Floating tube rack 2 Ident. No. 0020003668	15 ml	8	5 pcs.	**€ 29,00**
Floating tube rack 3 Ident. No. 0020003669	50 ml	4	5 pcs.	**€ 29,00**

FIXING CLIPS
/// for Ident. No. 0020004032, 0020004614, 0020006212, 0020007353

	Suitable sample vessels	Price
AS 2.1 Fixing clips Ident. No. 0001234300	25 ml	**€ 21,00**
AS 2.2 Fixing clips Ident. No. 0001234400	50 ml	**€ 21,00**
AS 2.3 Fixing clips Ident. No. 0001234500	100 ml	**€ 21,00**
AS 2.4 Fixing clips Ident. No. 0001234600	200/250 ml	**€ 41,00**
AS 2.5 Fixing clips Ident. No. 0001234700	500 ml	**€ 41,00**

Tube rack
13 mm, S, stainless



Variable rack ICC
ML, stainless
in combination with inlay 1

Variable bottom ICC
L, stainless

Bottom plate L

Accessories

/// Bath fluids

Chemical basis
› Silicon (Si)

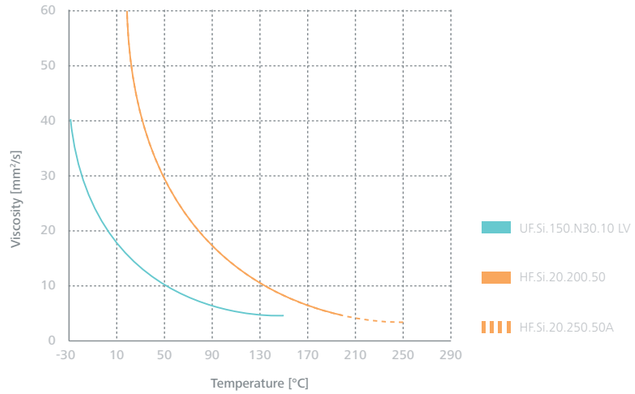
Viscosity

Bath fluid type
› Heating fluid (HF)
› Universal fluid (UF)

UF. Si. N20.150. 20 LV

Minimum/ maximum temperature

Additional information
› Low viscosity (LV)
› Contains additives (A)



SILICON-BASED TEMPERATURE CONTROL FLUIDS
/// Comparison

	Tempera-ture range	Viscosity at +25 °C	Color	Quantity	Price
Heating Fluids					
HF.Si.20.250.50 A Ident. No. 0020003521	+20 °C to +250 °C*	50 mm²/s	reddish-translucent	10 kg	**€ 450,00**
HF.Si.20.200.50 Ident. No. 0020003520	+20 °C to +200 °C**	50 mm²/s	clear	10 kg	**€ 400,00**
Universal Fluid					
UF.Si.N30.150.10 LV Ident. No. 0020003518	-30 °C to +150 °C***	10 mm²/s	clear	9 kg	**€ 400,00**

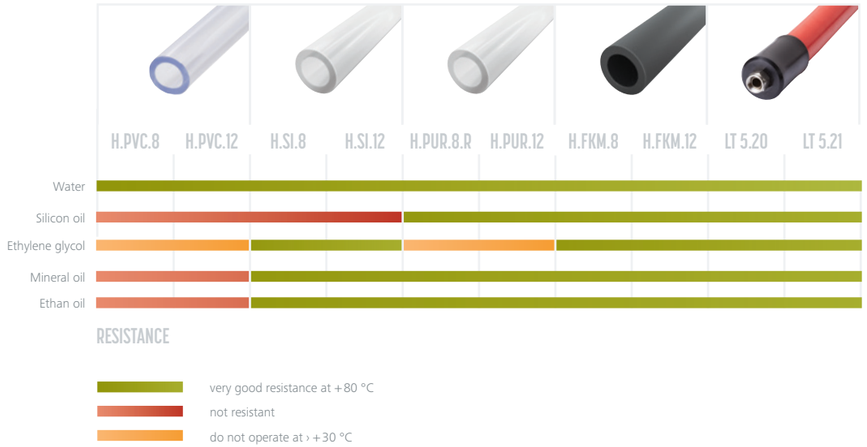
* +250 °C only in enclosed baths (HBC), otherwise +200 °C
** +250 °C only for a short time in enclosed baths
*** +130 °C in open baths

Accessories

/// Temperature control hoses

TECHNICAL DATA
/// Comparison

	H.PVC.8 | H.PVC.12 Ident. No. 0004568800 | 0004568900	**H.SI.8 | H.SI.12** Ident. No. 0004569000 | 0004569100	**H.PUR.8.R | H.PUR.12** Ident. No. 0020004612 | 0020004613
Unit of measure	2	2	2, incl. 4 hose clamps
Length	1.5 m	1.5 m	1.5 m
Material	PVC	Silicon	PUR clear, reinforced | PUR clear
Ø internal [mm]	8 | 12	8 | 12	8 | 12
Ø external [mm]	12 | 16	12 | 16	12 | 16
Connection	for hose barb fitting	for hose barb fitting	for hose barb fitting
Temperature range	-20 °C to +60 °C	-30 °C to +180 °C	-30 °C to +90 °C
Max. operating pressure (+20 °C)	depressurized operation	depressurized operation	8 bar | 3 bar
Color	transparent	transparent frosted	transparent frosted | transparent
	€ 11,00 | € 14,00	**€ 28,00 | € 34,00**	**€ 52,00 | € 64,00**



TECHNICAL DATA
/// Comparison

	H.FKM.8 | H.FKM.12 Ident. No. 0004569200 | 0004569300	**LT 5.20 | LT 5.21** Ident. No. 0002606700 | 0020000988
Unit of measure	2, incl. 4 hose clamps (only H.FKM.8)	2
Length	1.5 m	1.5 m
Material	Viton (FKM/FPM)	Stainless steel | PTFE
Ø internal [mm]	8 | 12	10 | 13
Ø external [mm]	12 | 16	45 | 38
Connection	for hose barb fitting/M 16 × 1	M 16 × 1
Temperature range	-30 °C to +180 °C	-30 °C to +300 °C | -30 °C to +260 °C
Max. operating pressure (+20 °C)	6 bar/1 bar (>1 bar on request)	6 bar
Color	black (additional stainless steel sheathing)	red
	€ 264,00 | € 323,00	**€ 1.050,00 | € 827,00**

ISO.8
› Hose insulation for DN 8 hoses
› 1.5 m
› 2 pcs.

Ident. No. 0004569400
€ 23,00

ISO.12
› Hose insulation for DN 12 hoses
› 1.5 m
› 2 pcs.

Ident. No. 0004569500
€ 30,00

Accessories

/// Temperature control instruments

SOLENOID VALVES
/// Comparison

	Description	Connection	Price
MV 1 Ident. No. 0020003763	Solenoid valve for cooling water regulation, 0 to +90 °C, max. 10 bar	2 hose olives DN8 included	**€ 368,00**
CO V 1 Ident. No. 0002000049	Shut-off valve for external tempering, -40 °C to +180 °C, max. 1 bar	Directly on circulator, second page for hose olives M 16 × 1	**€ 560,00**
Ball valve M 16 × 1 Ident. No. 0020004620	Manually operated ball valve	With union nut on one side for mounting on M 16 × 1 thread. Second connection M 16 × 1	**€ 75,00**

FURTHER ACCESSORIES
/// for temperature control instruments

	Description	Price
PCS.ICC Ident. No. 0004471900	Pump connection set for ICC	**€ 135,00**
PT 100.30 Ident. No. 0004284700	Temperature probe, stainless steel, 250 mm	**€ 279,00**
PT 100 extension (Lemo) Ident. No. 0020004629	Extension cable PT 100, lemo connector, 3 m	**€ 165,00**
WH 10 Ident. No. 0020000984	WiCo (wireless controller) wall mount	**€ 17,00**
PC 1.1 Ident. No. 0002616700	RS 232 cable, 3 m (10 ft)	**€ 31,00**
labworldsoft® 6 Pro Ident. No. 0020017366	Laboratory software	**€ 8.900,00**
labworldsoft® 6 Lite Ident. No. 0020017364	Laboratory software	**€ 3.900,00**

MV 1

CO V 1

CC1
› Cooling coil for IC basic

Ident. No. 0020005116
€ 123,00

CC2
› Cooling coil for ICC

Ident. No. 0025001061
€ 115,00

Mechanic fluid level controller
› Fluid level monitor for operating heating bath circulators or coolers on open baths.

Ident. No. 0020004618
€ 300,00

HOSE BARB FITTINGS AND ADAPTERS
/// Comparison

	Description	Unit of measure	Price
Barb fitting for DN 6 hoses Ident. No. 0020004667	Barb fitting adapter for DN 6 hose	2	**€ 30,00**
Barb fitting for DN 8 hoses Ident. No. 0020004566	Barb fitting adapter for DN 8 hose	2	**€ 25,00**
Barb fitting for DN 10 hoses Ident. No. 0020004568	Barb fitting adapter for DN 10 hose	2	**€ 30,00**
Barb fitting for DN 12 hoses Ident. No. 0020004889	Barb fitting adapter for DN 12 hose	2	**€ 25,00**
Adapter NPT 1/4 Ident. No. 0020004569	Adapter M 16 × 1 to NPT 1/4 (male)	2	**€ 37,00**
Adapter NPT 1/2 Ident. No. 0020004570	Adapter M 16 × 1 to NPT 1/2 (male)	2	**€ 117,00**
Adapter NPT 3/4 Ident. No. 0020004571	Adapter M 16 × 1 to NPT 3/4	2	**€ 140,00**
Lock nut M 16 × 1 Ident. No. 0020004583	Nut for mounting hose barb fitting adapters, stoppers, NPT adapters	2	**€ 35,00**
Stopper Ident. No. 0020004584	For sealing purposes, used in combination with a lock nut	2	**€ 35,00**
Elbow tube 90° Ident. No. 0025001212	90° tube adapter, e.g. used for connecting hoses without creating a bend	1	**€ 70,00**

Barb fitting for 6 mm/8 mm
Barb fitting adapter

Adapter NPT 1/4
Adapter M 16 × 1 to NPT 1/4 (male)

Adapter NPT 1/2
Adapter M 16 × 1 to NPT 1/2 (male)

Adapter NPT 3/4
Adapter M 16 × 1 to NPT 3/4 (male)

Stopper
for sealing purposes

Lock nut M 16 × 1
for mounting hose barb fitting adapters

Elbow tube 90°
90° tube adapter

ICC Packages

/// Heating bath circulators and combined heating bath circulators

ECO BATHS MADE OF PLASTIC CAN BE USED AT TEMPERATURES OF UP TO +100 °C (H_2O ONLY). PRO BATHS MADE OF STAINLESS STEEL CAN BE USED AT TEMPERATURES OF UP TO +200 °C.

ICC Package 1
- ICC basic/control head
- Bath bridge
- Bath vessel

from € 1.251,00

ICC Package 2
- ICC basic/control head
- Bath bridge
- Bath vessel
- Cover
- Cooling coil
- Pump connection set
- PT 100 temperature probe (control version only)

from € 1.598,00

TECHNICAL DATA
/// ICC Packages

	Bath size	Dimensions (W × D × H)*	Price
ICC Package 1 - Heating bath circulators | includes: ICC basic/control head, bath bridge, bath vessel			
ICC basic eco 8 Ident. No. 0008034900	S	total: 320 × 335 × 349 mm bath opening: 188 × 105 mm* max. bath opening: 227 × 118 mm**	**€ 1.251,00**
ICC control eco 8 Ident. No. 0008035300			**€ 1.751,00**
ICC basic pro 9 Ident. No. 0008035100		total: 374 × 377 × 388 mm bath opening: 195 × 100 mm* max. bath opening: 230 × 121 mm**	**€ 1.377,00**
ICC control pro 9 Ident. No. 0008035500			**€ 1.877,00**
ICC basic pro 12 Ident. No. 0010000414	M	total: 354 × 461 × 388 mm bath opening: 255 × 127 mm* max. bath opening: 292 × 147**	**€ 1.438,00**
ICC control pro 12 Ident. No. 0010000415			**€ 1.938,00**
ICC basic eco 18 Ident. No. 0008035000	L	total: 338 × 584 × 349 mm bath opening: 245 × 305 mm* max. bath opening: 286 × 325 mm**	**€ 1.377,00**
ICC control eco 18 Ident. No. 0008035400			**€ 1.877,00**
ICC basic pro 20 Ident. No. 0008035200		total: 354 × 641 × 388 mm bath opening: 255 × 309 mm* max. bath opening: 292 × 325 mm**	**€ 1.538,00**
ICC control pro 20 Ident. No. 0008035600			**€ 2.038,00**
ICC Package 2 - Combined heating bath circulators | includes: ICC basic/control head, bath bridge, bath vessel, cover, cooling coil, pump connection set, PT 100.30 temperature probe (control version only)			
ICC basic eco 8 c Ident. No. 0008035700	S	total: 320 × 335 × 349 mm bath opening: 188 × 105 mm* max. bath opening: 227 × 118 mm**	**€ 1.598,00**
ICC control eco 8 c Ident. No. 0008036100			**€ 2.327,00**
ICC basic pro 9 c Ident. No. 0008035900		total: 374 × 377 × 388 mm bath opening: 195 × 100 mm* max. bath opening: 230 × 121 mm**	**€ 1.724,00**
ICC control pro 9 c Ident. No. 0008036300			**€ 2.453,00**
ICC basic pro 12 c Ident. No. 0010000416	M	total: 354 × 461 × 388 mm bath opening: 255 × 127 mm* max. bath opening: 292 × 147**	**€ 1.818,00**
ICC control pro 12 c Ident. No. 0010000417			**€ 2.547,00**
ICC basic eco 18 c Ident. No. 0008035800	L	total: 338 × 584 × 349 mm bath opening: 245 × 305 mm* max. bath opening: 286 × 325 mm**	**€ 1.757,00**
ICC control eco 18 c Ident. No. 0008036200			**€ 2.486,00**
ICC basic pro 20 c Ident. No. 0008036000		total: 354 × 641 × 388 mm bath opening: 255 × 309 mm* max. bath opening: 292 × 325 mm**	**€ 1.918,00**
ICC control pro 20 c Ident. No. 0008036400			**€ 2.647,00**

* Dimensions to set plate at the bottom of bath.
Immersion depth for all baths with ICC: 85 mm to 125 mm.
** Maximum bath opening dimension at the upper edge of the bath.

ICC RO 15 Package
- ICC basic/control head
- Magnetic Stirrer RO 15
- Bath vessel IB R RO 15 eco
- Bath bridge BL.ICC

from € 3.200,00

TECHNICAL DATA
/// ICC RO 15 Package

	Bath size	Dimensions (W × D × H)*	Price
ICC RO 15 Package | includes: ICC circulator, bath bridge BL.ICC, bath vessel IB R RO 15 eco, multiposition magnetic stirrer RO 15			
ICC basic IB R RO 15 Ident. No. 0010002471	L	total: 365 × 722 × 388 mm bath opening: 317 × 492 mm	**€ 3.200,00**
ICC control IB R RO 15 Ident. No. 0010002474			**€ 3.700,00**

Immersion depth for all baths with IB R RO 15: 35 to 75 mm

IC Packages
/// Combined heating bath circulators

IC Package
- IC basic/control head
- Bath bridge
- Bath vessel
- Cover
- PT 100 temperature probe
- Cooling coil**

from € 3.182,00

TECHNICAL DATA
/// IC Package

	Bath size	Dimensions (W × D × H)*	Price
IC Package - Combined heating bath circulators | includes: IC circulator, bath, bath bridge, cover, cooling coil**, PT 100.30 temperature probe			
IC basic pro 12 c Ident. No. 0008039900	M	total: 354 × 461 × 359 mm bath opening: 255 × 80 mm* max. bath opening: 292 × 105 mm***	**€ 3.182,00**
IC control pro 12 c Ident. No. 0008040000			**€ 3.659,00**
IC basic pro 20 c Ident. No. 0008036800	L	total: 354 × 641 × 359 mm bath opening: 255 × 262 mm* max. bath opening: 292 × 278 mm***	**€ 3.320,00**
IC control pro 20 c Ident. No. 0008037200			**€ 3.797,00**

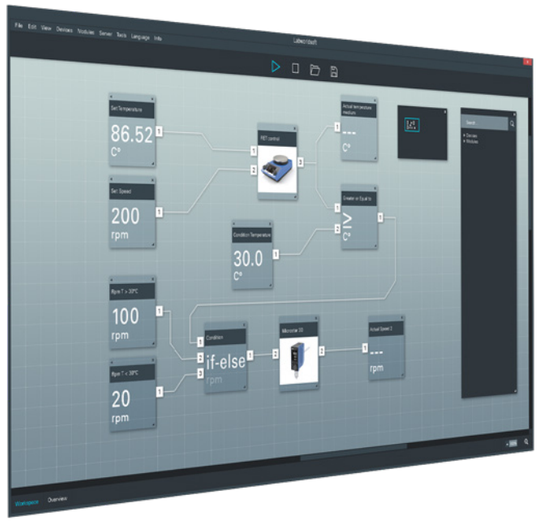
* Dimensions to set plate at the bottom of bath. | ** Already included in scope of delivery for IC control device.
Immersion depth for all baths with IC: 95 mm to 135 mm.
*** Maximum bath opening dimension at the upper edge of the bath.

labworldsoft® software

/// Advanced software with an innovative visual approach to lab automation

IKA's software labworldsoft® enables the networking of up to 64 laboratory devices which can be controlled simultaneously via one PC. Not only IKA products, but also other manufacturers laboratory devices can be integrated using labworldsoft®.

This makes the automation of your laboratory experiments and processes much more easy and efficient.



labworldsoft® 6 Pro

Ident. No. 0020017366

€ 8.900,00

labworldsoft® 6 Lite

Ident. No. 0020017364

€ 3.900,00

TRY IT FOR YOURSELF
Get your free, fully functional 30 day trial version download at: www.labworldsoft.com

HARDWARE AND SOFTWARE REQUIREMENTS
/// labworldsoft® Software

Windows 7/8.1/10 (64-bit operating system) with at least 2 GB RAM and 100 MB free hard disc memory. Some devices require the installation of a specific device driver. Communications interfaces can be retrofitted using an adapter at the PC, if necessary.

Calibration and adjustment

/// Two-point or three-point calibration

The internal (and external, if used) temperature sensor can be adjusted via either a two-point or three-point calibration process. On request, calibration can also be performed in the plant by the IKA service team or by an external, ISO- and DAkks certified service provider.

If you would like to request this service, please contact our service department by telephone at **00 8000 4524357** (00 8000 IKAHELP) or by email **service@ika.de.**

Customizing Center

It is important that IKA products perform in real laboratory applications. We have a special program of product solutions that are customized to your individual needs. If you cannot find the right device in our standard product range, please send us the details of the specification you need using the online form. Our team will check the feasibility of the specification and offer you a solution.

Please visit **www.ika.com** to have look at the product modification requests that we have already implemented.

Worldwide service network

/// Direct contacts in your region

Our dedicated team of engineers provides comprehensive technical service on a global level. If you have any questions, please do not hesitate to contact IKA directly. Alternatively, you can get in touch with your dealer.

IKA guarantees that spare parts will be available for 10 years. In the event of any faults with a device, or if you have any technical questions regarding our products, their maintenance or replacement parts, please call us at **00 8000 4524357** (00 8000 IKAHELP) or send us an email **service@ika.de.**

IKA Application Support

Our Application Center spans 400 m² and is equipped with the most modern facilities for presenting and testing laboratory equipment and processes. The Center brings us even closer to our customers and improves our service. If you are interested, you can use our facilities to test processes that include stirring, shaking, dispersing, grinding, heating, analysis and distillation.

Please call us at **00 8000 4522777** (00 8000 IKAAPPS)
or send us an email **applicationsupport@ika.de.**

Our Application Center covers **400 m²** and offers modern equipment for demonstrating and testing laboratory devices and processes.

We would be happy to help you find the **perfect device** for your application.

Send us your sample. We will run a test with the suitable device - within 48 hours.

Interested individuals and customers can **test processes** including stirring, shaking, dispersing, milling, heating, analyzing and distilling.

IKA

designed for scientists

EN

IKA-Werke GmbH & Co. KG
Janke & Kunkel-Straße 10, 79219 Staufen, Germany
Phone: +49 7633 831-0, Fax: +49 7633 831-98
eMail: sales@ika.de

/// WORLDWIDE

USA
IKA Works, Inc.
Phone: +1 910 452-7059
eMail: sales@ika.net

MALAYSIA
IKA Works (Asia) Sdn Bhd
Phone: +60 3 6099-5666
eMail: sales.lab@ika.my

JAPAN
IKA Japan K.K.
Phone: +81 6 6730 6781
eMail: info_japan@ika.ne.jp

VIETNAM
IKA Vietnam Company Limited
Phone: +84 28 38202142
eMail: sales.lab-vietnam@ika.com

KOREA
IKA Korea Ltd.
Phone: +82 2 2136 6800
eMail: info@ika.kr

INDIA
IKA India Private Limited
Phone: +91 80 26253 900
eMail: info@ika.in

POLAND
IKA Poland Sp. z o.o.
Phone: +48 22 201 99 79
eMail: sales.poland@ika.com

BRAZIL
IKA Brasil
Phone: +55 19 3772-9600
eMail: sales@ika.net.br

CHINA
IKA Works Guangzhou
Phone: +86 20 8222 6771
eMail: info@ika.cn

ENGLAND
IKA England LTD.
Phone: +44 1865 986 162
eMail: sales.england@ika.com

/// ONLINESHOP

For more information on our products or to order online, please visit:
www.ika.com

/// SOCIAL MEDIA

IKAworldwide IKAworldwide /// #lookattheblue @IKAworldwide

Prices are valid until October 31, 2018.
All prices exclude VAT.
IKA reserves the right to modify products, part numbers, and pricing.

201805_ThermostateLab_EN_IWS_EUR_94000320

TEMPERATURE CONTROL PRODUCTS MADE BY IKA.

IKA

www.ika.com